

The background of the slide features a complex, abstract pattern of thin, intersecting lines in various colors (blue, green, yellow, red, purple) and small dots scattered across the white space. The lines and dots are arranged in a way that suggests a network or a data visualization, possibly related to the physics experiments mentioned in the title.

Overview of UK plans for LBNE and LAr1-ND

Introduction

- ★ UK LAr1-ND funding being sought as part of broader LBNE proposal
(being reviewed at the moment)
- ★ Purpose of this talk – provide the some context for the more detailed discussions

LBNE-UK

★ Currently 10 institutes – all members of **LBNE**

- Cambridge
- Lancaster
- Liverpool
- Manchester
- Oxford
- Sheffield
- STFC-RAL
- Sussex
- UCL
- Warwick

Strong heritage from:
MINOS
T2K
and beyond

★ Currently 2 institutes also on **MicroBooNE**

- Cambridge
- Oxford

Interest in LAr1-ND

★ Five institutes proposing construction work

- Cambridge
- Lancaster
- Liverpool
- Manchester
- Oxford
- Sheffield
- STFC-RAL
- Sussex
- UCL
- Warwick

Strong hardware heritage from:

SuperNEMO

Dark Matter

T2K

Small scale LAr R&D

★ + the 2 institutes on **MicroBooNE**

- Cambridge
- Oxford

UK LBNBNE Proposal

LBNE-UK Aims

★ Long-term aim

- Major UK contribution to LBNE far detector construction
 - TPC is the priority
 - Identified Anode Plane Assemblies **APAs**, Cathode Planes and **DAQ** as most likely UK contributions

★ Medium-term (next 3-years)

- Major UK contributions to CD2/CD3 for LBNE (aka LBNF)
 - Contribute to physics studies/35t prototype/LAr reconstruction
- Strong involvement in FNAL LAr SBL programme
 - **MicroBooNE and LAr1-ND**
 - Essential physics for Post-docs + LAr experience
- Build UK capability
 - **APA and cathode construction for LAr1-ND**

LBNE-UK Proposal

★ UK Research divided into 5 WPs

- **WP0: Management**
 - reporting to STFC etc., travel budget
- **WP1: LBNE physics**
 - Umbrella for UK physics activities
- **WP2: LBNE Software**
 - Neutrino reconstruction in LAr
- **WP3: LBNE DAQ**
 - DAQ for LBNE
- **WP4: 35t Prototype**
 - DAQ and data analysis for 35t prototype
- **WP5: LAr1-ND & APA design**
 - Hardware development focused on LAr1-ND



★ **Largest request for resources: WP5**



WP5 Tasks

★ WP5 – LAr TPC Design & Construction

- WP5.1: LAr1-ND APA Design, Construction and Installation
 - WP5.1.1: APA frame design & construction
 - WP5.1.2: APA wiring & integration
 - WP5.1.3: APA (cold-)testing, transport & installation
- WP5.2: LAr1-ND CPA and HV Design & Construction
 - WP5.2.1: CPA design & construction
 - WP5.2.2: HV feedthrough design & construction
 - WP5.2.3: CPA transport & installation
- WP5.3: LBNE APA design

LAr1-ND UK Deliverables

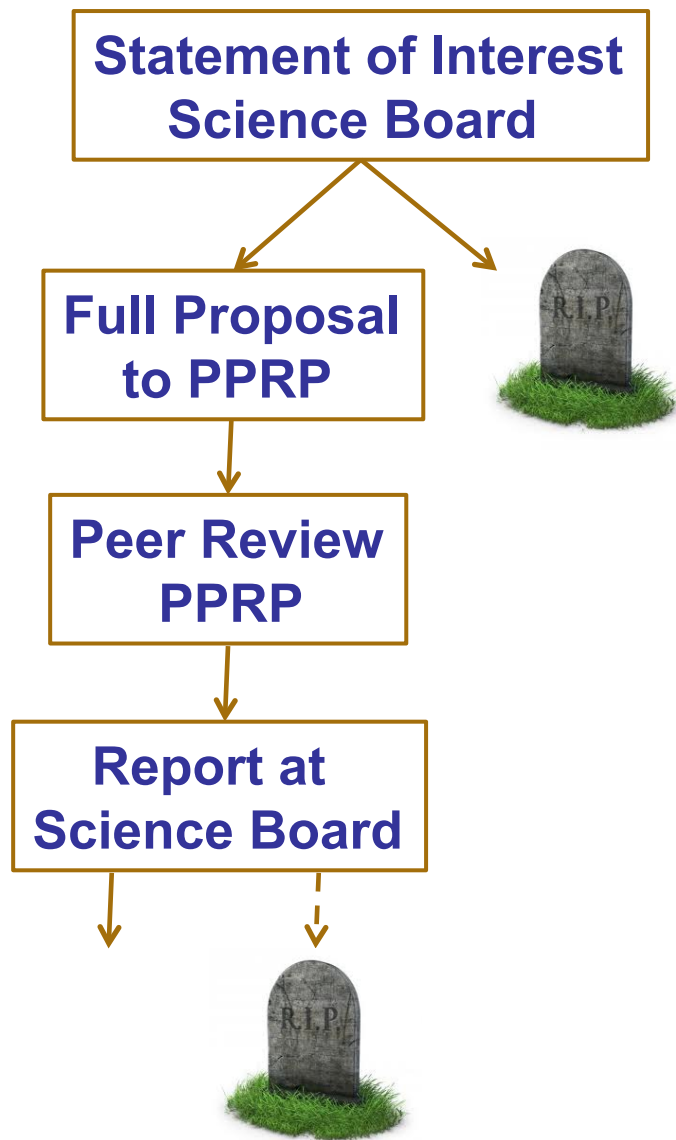
★ LAr1-ND Deliverables as written in the UK proposal...

- 1 APA (frame + wiring)
- 1 Cathode plane
- HV feedthrough

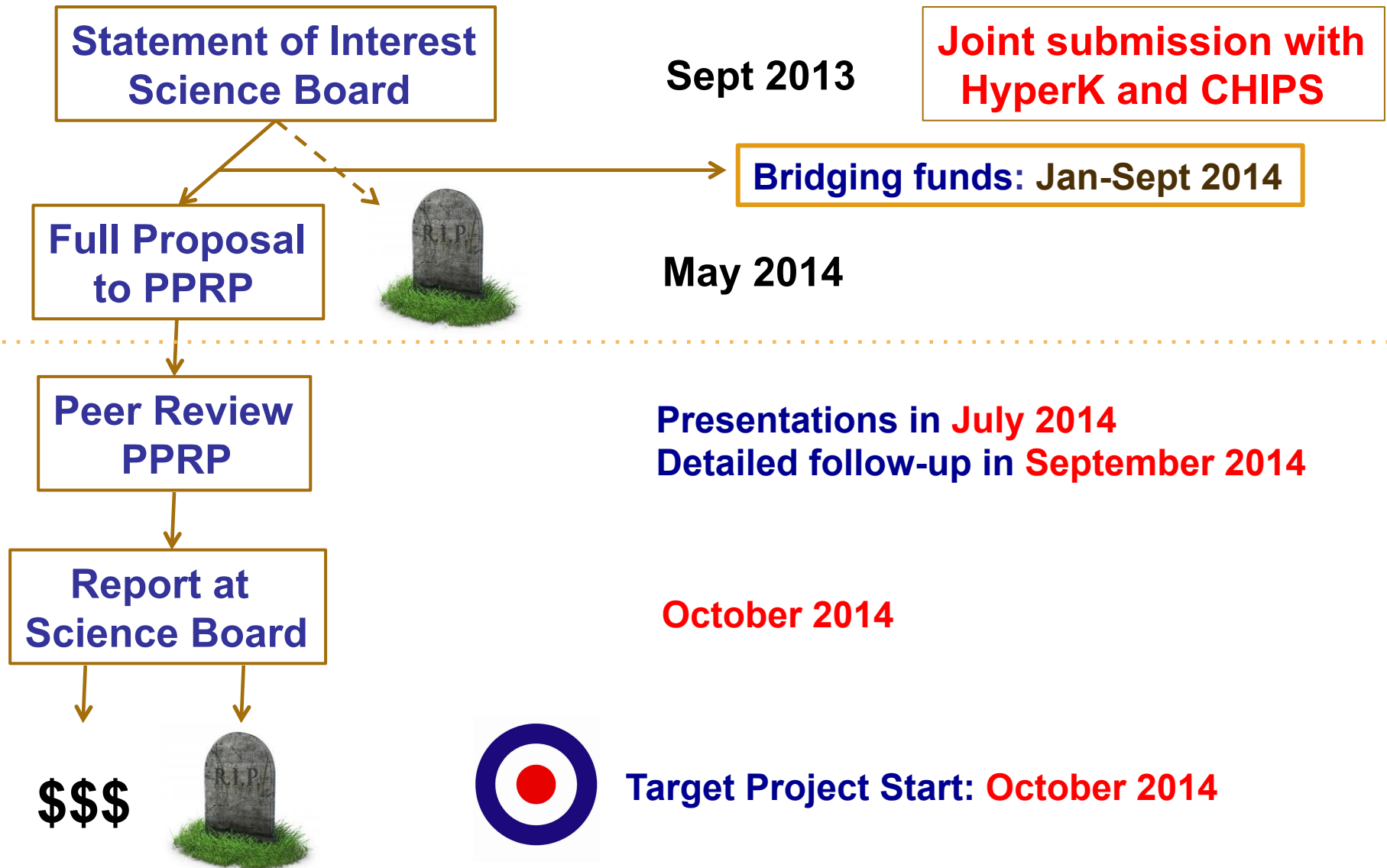
★ After review process: potential for consolidation

UK Funding

STFC Process



Timeline



Prospects



IMHO

- ★ Many reasons to be optimistic
- ★ Funding for LAr1-ND likely (IMHO)
 - Case is strong
- ★ Devil will be in the detail:
 - Not a simple yes/no...
- ★ Main risk would be a delay
 - e.g. CD-0, CD-1, CD-2, ...

Closing Remarks

- ★ **UK Peer review is based on strength of project**
 - not just science
- ★ **Essential that we have a clear plan for:**
 - schedule and costs of UK LAr1-ND activities
 - how these fit in with the bigger picture: **US - UK**

- Hopefully today's meeting will help with:**
- the big picture
 - finding any holes/overlaps/misunderstandings